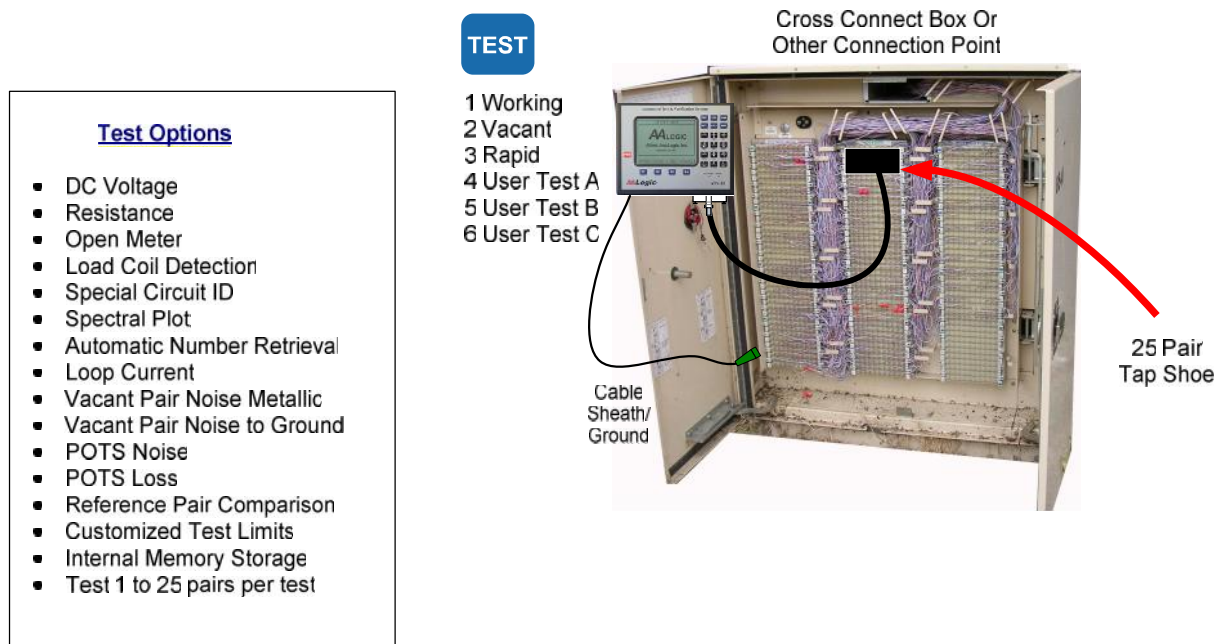


1. Automatic Tests

The ATV-25 automatic tests are the most efficient method of bulk testing pairs. The automatic tests results can be saved to internal memory and later uploaded to a PC using the included ATV Tools software. Only Auto tests can be saved in internal memory and recalled or uploaded.

The figure below shows a typical connection for automatic tests.



ATV-25 Automatic Tests

1.1 Default Tests

Three automatic tests are pre-programmed. The tests make it easy to select and run typical tests. The pre-programmed tests conduct the following tests.

Test	DC Volts	Ohmmeter	Capacitance Meter	Capacitive Balance	Loop Current	Reference Pair Check
Working	X	X	X	X	X	O
Vacant	X	X	X	X		O
Rapid	X		X	X ¹		O

X=Included O = Optional

¹ Balance measurements are completed if the reference pair comparison is ON and the comparison fails.

1.2 Custom Tests

The ATV-25 provides three customizable tests labeled User Test A, User Test B, and User Test C. Each of the tests allows the user to select any of the available test options. The ATV-25 performs each of the selected options when the custom test is executed. The ATV-25 custom test options are:

- ✓ DC Volts (always ON)¹
- ✓ Resistance
- ✓ Open Meter
- ✓ Load Coil Detection
- ✓ Noise (Vacants)
- ✓ Special Circuit Identification (DSL/T1)
- ✓ Spectral Plot
- ✓ Loop Current
- ✓ Number Retrieval (ANAC)²
- ✓ Number Retrieval (CID)²
- ✓ POTS Noise
- ✓ POTS Loss

¹The DC Voltage is always measured to ensure that potentially damaging voltages or voltages that may invalidate other measurements are not present.

²Either ANAC or CID may be selected for a test, not both.

1.3 Test Limits

The ATV-25 provides custom limit options for each of the six automatic tests. The mid-point is the default value for these limits. The limits are the values used to determine if a measurement is acceptable or classified as a fault. The following limits are configurable.

Limit	Limit 1	Limit 2	Limit 3	Limit 4
Resistance Fault Measurements below this value are classified as a Ground or Short.	1M	3M	10M	N/A
Capacitive Balance The pair is classified Unbalanced if the TG and RG capacitances vary by more than this limit.	10%	5%	3%	N/A
Length Deviation The pair is classified as a Length Error if the measured length varies from the selected reference pair length by more than this limit.	10%	5%	3%	OFF
Noise TR The measured TR noise must be lower than this limit.	-50 dBm	-60 dBm	-70 dBm	N/A
Noise Ground (longitudinal) The measure noise to ground must be lower than this limit.	0 dBm	-20 dBm	-30 dBm	N/A
Loss The measured loss must be less than this limit compared to the known source level.	6 dBm	3 dBm	1 dBm	N/A

Other, non-configurable limits that apply to tests are:

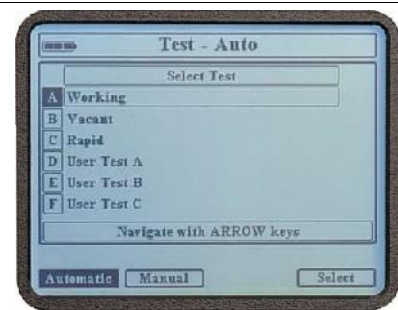
Limit	Value
Loop Current	$20\text{mA} \leq \text{Loop Current} \leq 49 \text{ mA}$
Open	$\leq 30 \text{ feet}$
POTS Busy	$-7.0 \text{ VDC} \leq \text{TR DCV} \leq -30 \text{ VDC}$
POTS Idle	$-32 \text{ VDC} \leq \text{RG DCV} \leq -58 \text{ VDC}$
Color Reversed POTS Busy	$7.0 \text{ VDC} \leq \text{TR DCV} \leq 30 \text{ VDC}$
Color Reversed POTS Idle	$-32 \text{ VDC} \leq \text{TG DCV} \leq -58 \text{ VDC}$
Battery (BAT)	$-2.0 \text{ VDC} \leq \text{DCV} \leq 2.0 \text{ VDC}$

Changes to the limits for one test do not affect the limits for any of the other tests. It is always a good idea to check the limit settings at the beginning of a series of tests.

1.4 Automatic Tests Step-by-Step

The steps that follow are the same for the pre-defined tests and the custom tests are the same with one exception. The custom tests have a setup option to select the test options. There are no test options for the pre-defined tests. The limits are configurable for both the pre-defined tests and the custom tests.

Press [**T**est]. Use **▲** and **▼** keys to highlight the desired test.



TEST main screen



User Test A highlighted

Press [F4] Select

The screen shows the currently selected CO, Location, User, and Reference Pair. The ATV-25 retains the last information entered for cable, start pair, and stop pair until the recall function is used which resets these values to the defaults.

Use ▲ and ▼ keys to highlight a parameter to change.

Use ◀ or ▶ to change the CO, Location, User, or Ref Pair ID to one of the stored slots. Press [CFG] to edit or enter new information.

Press **5** **Change** to enter new information for the Cable, Start Pair, or Stop Pair. The cable and start pair should be entered as the actual pair for the 25 pair group. This information is included in the test when test results are uploaded.

An automatic test can test 1 pair or up to 25 pairs. A single pair can be tested by entering the same pair number for the Start Pair and Stop Pair numbers.

❗ The PRO cord can also be used for automatic testing. The Start Pair and Stop Pair numbers must be set to 0.

❗ The Stop Pair will automatically be calculated and entered as the last pair in the 25 pair group when a pair number is entered for the Start Pair. This value can be changed if desired.

❗ A shortcut to enter PRO is to press **5** then press [ENT].



User Test A – The CO is WFD, Location is Main, User is JD001, the Ref Pair ID is RF1300, Cable is 1, Start Pair is 1, and the Stop Pair is 25.

User Test A, User Test B, and User Test C Only

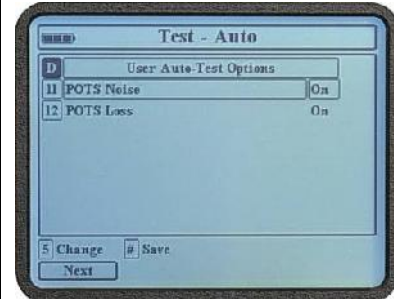
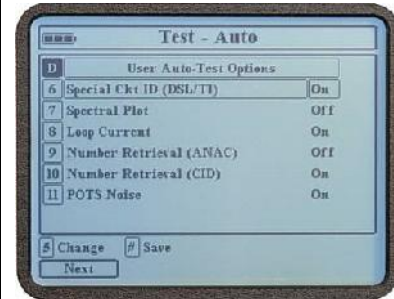
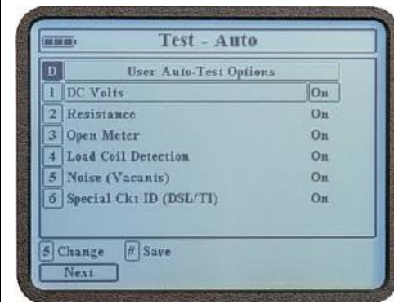
Press [F2] Setup

The user test options are arranged on three pages. Press the [F1] Next key to select then next page of options.

Each option can be On or Off with the exception of DC Volts. Use ▲ and ▼ keys to highlight an option to change and press the [5] Change key to toggle the selection between On/Off.

Customizing the user tests maximizes test time by only completing the desired measurements.

Press the [#] / [ENT] Save key to store the options and return to the test start screen.



Press [F3] Limits from the test select screen to view/change the limits. This screen allows selection of limits for the test. Each limit has three possible values except the Length Deviation, which has four.

Use ▲ and ▼ keys to highlight an option to change and press [F1], [F2], [F3], or [F4] to select the desired limit.

Press the [#] / [ENT] Save key to save the options and return to the test start screen.



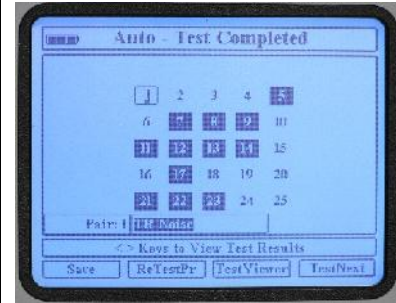
Verify the test information. The **Setup** should be completed for custom tests and the **Limits** set for the test.



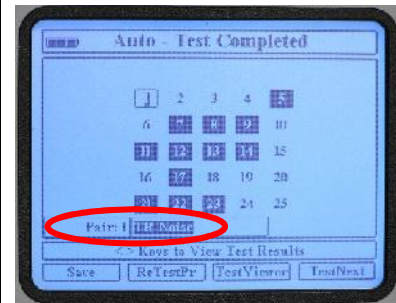
Press [F1] Start

The test starts running beginning at the Start Pair and ending at the Stop Pair. The ATV-25 automatically calculates the correct Cinch pair number for the selected pair group.

The ATV-25 displays each pair number and the result as it is tested. Pairs with one or more faults appear as a black square.



The review screen is displayed at the end of the test. The **▲**, **▼**, **◀**, and **▶** keys are used to move the highlight (square box) to different pairs. The numbers on the review screen are labeled 1 through 25 and are the Cinch/Tap Shoe connector pair numbers. The actual pair count number and result summary are indicated at the lower part of the information region of the screen.



Auto test review screen with pair 1 highlighted. The actual pair count number and result are pair 1, TR Noise.

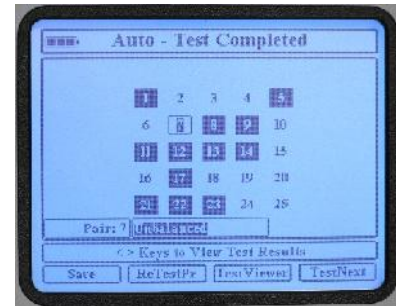
The details of the tests on a pair can be reviewed by highlighting the pair and pressing **[F3] Test Viewer**.

Example 1: This example shows pair 7 highlighted. The test result is Unbalanced. Unbalanced indicates that the TG and RG are not the same length and the difference exceeds balance limit set for the test.

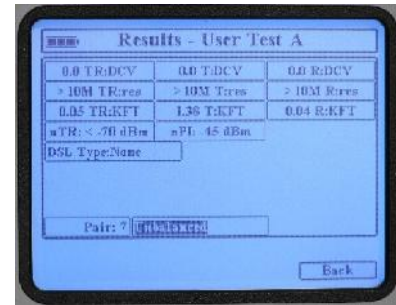
The Test Viewer shows the tests completed on the pair.

- ✓ DC Voltages – None found
- ✓ Resistance – No faults detected
- ✓ Open Meter – TR = 50 ft., TG = 1,380 ft., and RG = 40ft.
- ✓ Noise TR = < -70 dBm
- ✓ Noise Power Influence = -45 dBm
- ✓ No special circuit was detected.
- ✓ Load coil detection was not performed due to the Unbalance condition.

① The Test viewer allows the previous or next test pair to be viewed by using the ◀ and ▶ keys respectively.



Auto Test Review with pair 7 highlighted and the result summary is Unbalanced.



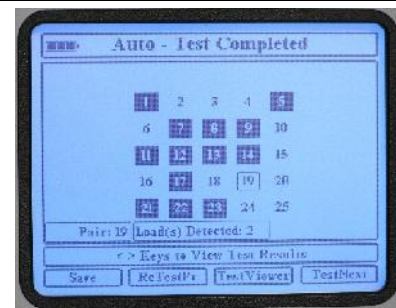
Test Viewer information for pair 7.

Example 2: This example shows pair 19 highlighted. The test result is 2 loads detected. Load coil detection is only completed on pairs that are Vacant. Vacant is defined as no DC voltage, no resistive faults, and capacitively balanced.

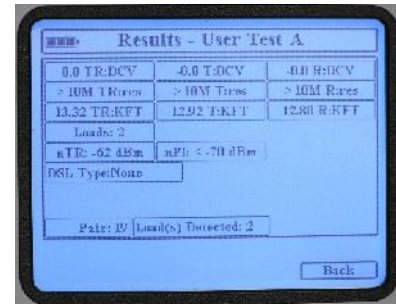
The Test Viewer shows the tests completed on the pair.

- ✓ DC Voltages – None found
- ✓ Resistance – No faults detected
- ✓ Open Meter – TR = 13,320 ft., TG = 12,920 ft., and RG = 12,800 ft. The difference is approximately 0.93%. This is well within the 5% balance limit.
- ✓ Two load coils were detected
- ✓ Noise TR = -62 dBm
- ✓ Noise Power Influence = < -70 dBm
- ✓ No special circuit was detected.

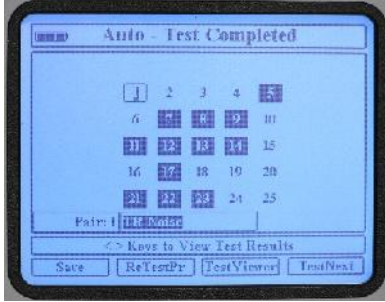
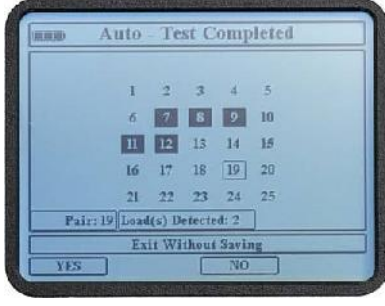
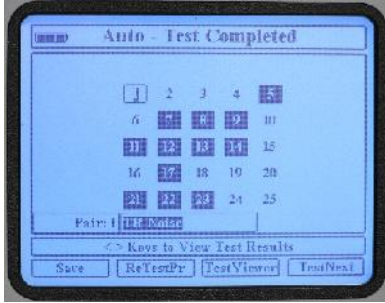
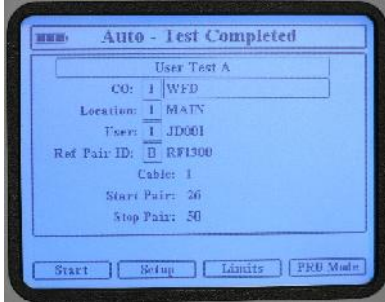
Load coil detection identified two load coils. Pressing the **[F4] Back** key returns to the review screen.



Auto Test Review with pair 19 highlighted and the result summary is 2 loads detected.



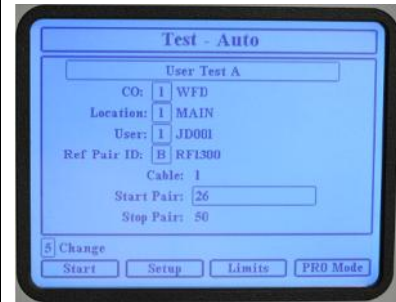
Test Viewer information for pair 19.

<p>A pair can be retested without repeating the entire test. This allows the user to correct potential connection problems, problems with a splice, or repeat testing for a line.</p> <p>The ▲, ▼, ◀, and ▶ keys are used to move the cursor (square box) to a pair for viewing or retesting. Press [F1] ReTestPr to start the retest. All the selected test options are repeated for the pair and the results replace the previous results.</p>	
<p>The results of an Auto Test can be saved in internal memory. The ATV-25 displays a confirmation message if the [CLR] key or a jump key is pressed without saving the test results. Pressing [F1] YES executes the key press and discards the test results. Press [F3] NO to return to the review screen.</p> <p><input checked="" type="checkbox"/> Test results cannot be recovered if the Save option is not used at the review screen.</p>	
<p>Press [F2] Save to save the test results in internal memory. The test results are now available for recall and review on the ATV-25 and for upload to a PC using ATV Tools software.</p> <p>Press the [F4] TestNext to discard the current results and test the next 25 pairs.</p>	
<p>The ATV-25 returns to the test start screen after saving. Start and end pair numbers are incremented for the next 25 pair group. This allows the user to move the tap shoe to the next group and press [F1] Start to test the next 25 pair group.</p>	

1.4.1 PRO Mode Testing

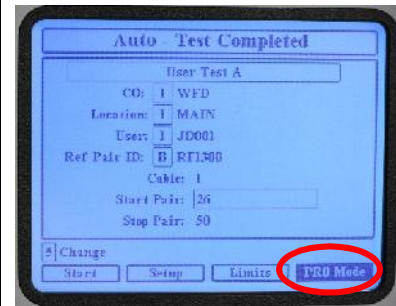
The PRO Mode is provided to allow testing multiple pairs when a tap shoe is not available. The user moves the PRO cord from pair to pair and presses **[F1] Start** for each pair. The ATV-25 keeps track of the pair numbers and creates a 25 pair test result as though a tap shoe was used.

The PRO Mode is enabled by pressing the **[F4] PRO Mode** key prior pressing **[F1] Start** to begin the test.

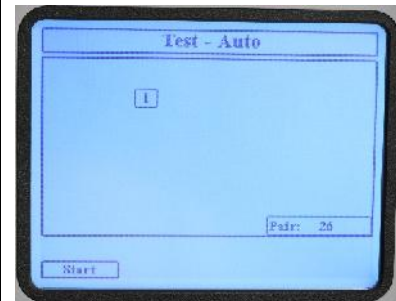


PRO Mode is enabled by pressing **[F4] PRO Mode**

The PRO Mode label is displayed with a black background when it is selected. It will stay selected for multiple tests for convenience.

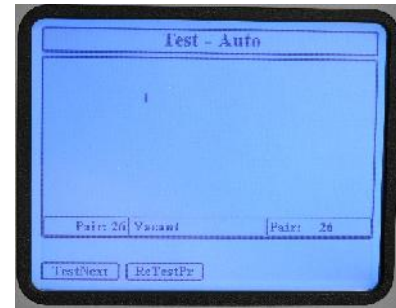


The initial test screen displays the first pair for the test and the **[F1] Start** key is enabled. The user connects the first pair to the PRO cord. The test adapter on the door of cross connect boxes make this step easier,

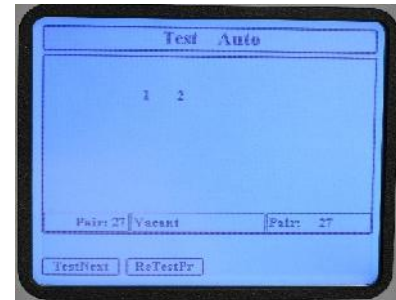


The user connects the indicated pair to the PRO cord and presses **[F1] Start**.

The same pair can be re-tested by pressing **[F2] ReTestPr** if there was a connection error or the next pair can be tested. The user moves the PRO connection to the next pair and presses **[F1] TestNext** to test the next pair. This process is repeated for each pair.



The first pair is tested. It can be retested by pressing **[F2] ReTestPr**.



The next pair is tested. Again the same pair, 27, can be retested or the PRO cord moved and press **[F1] TestNext** to test pair 28.

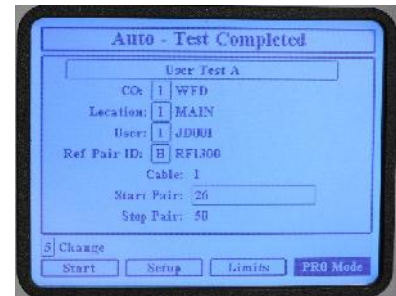
The user can review all the test results once all pairs have been tested. This includes using the TestViewer.

NOTE: The PRO cord must be reconnected to the pair before the **[F2] ReTestPr** function can be used.

The **[F1] Save** key cycles the test set for the next 25 pairs in sequence.



Review screen is displayed after all selected pairs are tested.



The ATV-25 cycles to the next 25 pair after **[F1] Save** is pressed.

2. Recall Stored Test Results

The Recall (RCL) feature allows the user to recall and review previously stored test results. Only saved Auto and End2End tests can be recalled. The ATV-25 internal memory is capable of storing the test results for up to 4,000 pairs. This space is typically adequate for saving several days' work.

The test results can be uploaded to a PC using the ATV-25 Tools software provided with the test set. The number of pairs that can be saved to a PC is only limited by the disk storage space available.

The RCL feature also allows test results to be deleted when they are no longer needed or to make space available for additional test results. The memory used by deleted test results is automatically reclaimed and available for storing test results.

Test results cannot be recovered once they are deleted in the [RCL] function. It is important to upload to a PC any results that should be retained prior to using the Delete option of the Recall function.

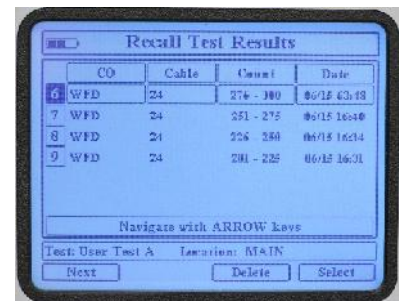
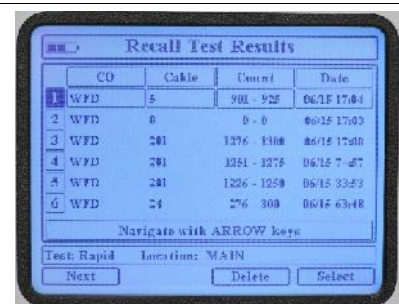
2.1 Recall Stored Test Results Step-by-Step

Press **[RCL]**. Use **▲** and **▼** keys to highlight the desired test results.

The test result list is sorted so that the last test is on top. The **[F1] Next** option will be displayed if there is more than one page of test results available.

The **[F2] Delete** key deletes the currently selected test result.

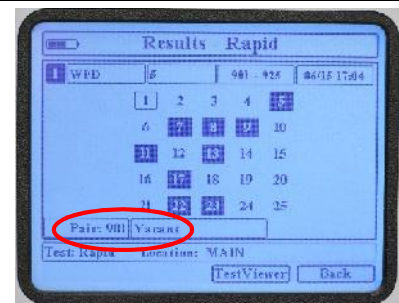
There is no confirmation prompt before deleting the test record. Ensure you really want to delete the test results before pressing **[F3] Delete**. It is easier to delete test results using ATV-25 Tools after uploading stored data.



Press **[F4] Select**

The test results are displayed in the same manner as the review screen at the end of a test.

The **▲**, **▼**, **◀**, and **▶** keys are used to move the highlight (square box) to different pairs. The numbers in the review are labeled 1 through 25 and are the Cinch connector pair numbers. The actual pair count number and result summary are indicated at the lower part of the information region of the screen



Press **[F4] TestViewer**

The Test Viewer is identical to the Test Viewer function at the end of a test. The test values are read-only and cannot be altered.

The ◀ and ▶ keys can be used to view the previous and next pair respectively.

The **[F4] Back** key returns to the test result screen.

